MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Executive Office

July 14, 2006

Ms. Pamela C. Creedon
Executive Officer
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, Suite #200
Rancho Cordova, CA 95670-6114

Dear Ms. Creedon:

NPDES NO. CA0084271

The Metropolitan Water District of Southern California (Metropolitan) appreciates the opportunity to comment on the Tentative Waste Discharge Requirements for Mountain House Community Services District Wastewater Treatment Facility (Tentative WDR). Metropolitan, through its member agencies, provides approximately half of the water used by 18 million people in a six-county region. Water diverted from the Bay-Delta is one of Metropolitan's two major sources of supply, and source water protection is essential to our mission of providing water that is safe to drink. The discharges to Old River from the Mountain House Wastewater Treatment Plant (Mountain House) in close proximity to the export pumps, means that there is direct link between the quality of the wastewater effluent and the quality of exported drinking water supplies, as well as the potential to exceed the State Board-adopted salinity objectives in the South Delta.

We commend the Central Valley Regional Water Quality Control Board (Regional Board) staff for limiting the discharge of nitrogen and pathogens through effluent and treatment requirements. We also commend staff for an excellent discussion of the basis for the requirements and for the clear description of the regulatory context. While the proposed discharge exceeds State Board-adopted salinity objectives in the South Delta, we are encouraged that the Tentative WDR requires the development of a Pollution Prevention Plan for salinity. We ask, however, that the Regional Board consider additional permit restrictions to protect drinking water beneficial uses from adverse impacts of phosphorus and total organic carbon loading and to further strengthen the requirements for nitrogen. Additional restrictions are necessary under the State's Antidegradation Policy and to implement certain narrative objectives.

Metropolitan recognizes that the Regional Board is in the process of developing a drinking water policy that will ultimately address these constituents of concern. We believe, however, that steps toward controlling discharges of these constituents should not be delayed. Our specific recommendations are discussed below.

700 N. Alameda Street, Los Angeles, California 90012 • Mailing Address: Box 54153, Los Angeles, California 90054-0153 • Telephone (213) 217-6000

Nutrients

Delta waters are rich in both phosphorus and nitrogen. These nutrients stimulate excessive algal growth that can cause taste and odor problems and higher levels of organic carbon because of greater algal mass. For reasons discussed below, elevated levels of organic carbon can lead to higher concentrations of disinfection by-products in treated drinking water supplies, and many of these are potential human carcinogens. Further, some algal species produce algal toxins that can be harmful to human health. High nutrient levels also stimulate the growth of other aquatic plants that affect water system operations. Metropolitan frequently experiences algal-related taste and odor problems in its drinking water reservoirs containing water diverted from the Delta. Similarly, California's Department of Water Resources periodically needs to treat water at Clifton Court and other facilities to prevent and/or control the growth of aquatic weeds.

We are very pleased that Mountain House is adding nitrification and denitrification processes and that the Tentative WDR contains effluent limits for nitrogen. The limits, however, do not consider the impact of nitrogen on algae and other aquatic plants. Nor does the Tentative WDR address the problem of phosphorous in the wastewater discharge. Proposed permit combined limits for N (i.e., ammonia, nitrate and nitrite) would allow nitrogen concentrations of 12.3 mg/L, substantially in excess of nitrogen in Delta receiving waters. Also, the limits do not appear to reflect technically feasible reductions that can be readily achieved. It should be possible to achieve 80 - 90 percent nitrogen removal on a monthly average, yet the proposed limits appear to assume removal efficiencies that are significantly less.

Further, the permit does not establish any effluent limits for phosphorus. Phosphorus concentrations in the Delta are at levels considered eutrophic, and control of phosphorus loading to the Delta is critical. The Central Valley Regional Water Quality Control Board's Basin Plan (Basin Plan) states that water shall not contain biostimulatory substances nor taste-and-odor producing compounds that produce unacceptable tastes or odors. There is likely some removal of phosphorus during coagulation and tertiary treatment, and additional removal can be achieved through increasing the coagulant dose.

> **Recommendation:** Metropolitan asks that the Regional Board establish a monthly average effluent limit for total inorganic nitrogen, assuming at least 80 - 90 percent removal, and that Mountain House implement any modifications to the nitrification/denitrification treatment train to achieve the limit. We further ask that the Regional Board establish limits for total phosphorus, considering the U.S. Environmental Protection Agency's (USEPA) guidelines for nutrient criteria. The permit should also contain monitoring requirements for phosphorous.

Total Organic Carbon (TOC)

Wastewater discharges contribute to elevated levels of organic carbon in Delta waters. TOC combines with chlorine, the principal disinfectant used by drinking water suppliers, to form disinfection by-products. In drinking water treatment plants that disinfect with ozone, higher TOC increases ozone demand. Ozone combines with bromide to form bromate, and bromate formation is of particular concern in high bromide drinking water sources like the Delta. Bromate and many of the chlorinated disinfection by-products are potential carcinogens or associated with other adverse health effects.

Under the USEPA's Stage 1 Disinfectant/Disinfection By-products Rule, drinking water suppliers are required to achieve additional TOC removal at their treatment plants, if the running annual average TOC exceeds 4 mg/L and alkalinity is greater than 60 mg/L, conditions common in Delta waters. The additional removal is required to limit the production of harmful disinfection by-products in treated water supplies. The Tentative WDR does not include any effluent limitations for total organic carbon, yet organic carbon is a precursor to toxic disinfectant by-products. The Basin Plan requires that "(a)ll waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plan, animal or aquatic life". TOC can be removed with the addition of a coagulant. Some TOC removal may be achieved through the coagulation/filtration process that Mountain House already plans to implement.

> **Recommendation**: Metropolitan asks that the Regional Board include effluent limits for TOC, along with monitoring requirements. The limits should consider the level of TOC removal expected to be achieved as a result of the planned coagulation/filtration processes as well as any additional removal that would occur as part of the treatment to achieve the requested phosphorous removal.

Again, I thank you for the opportunity to provide comments. If you have any questions on our recommendations, please feel free to contact Marcia Torobin of my staff at (213) 217-7830.

Sincerely,

Mic Stewart, Ph.D.
Manager, Water Quality Section